

2017 Rule Change Proposal 24 **Amended**

Purpose: To clarify the criteria for classification of free floating ergotized caryopses as inert matter in Volume 1 of the AOSA Rules.

Present Rule:

3.5 Inert matter. –

c. Other non-seed matter.

(1) Free nematode galls or fungus bodies such as smut, ergot and other sclerotia.

Proposed Rule:

3.5 Inert matter. –

c. Other non-seed matter.

(1) Free nematode galls or fungus bodies such as smut, ergot (including partially or fully ergotized free caryopses) and other sclerotia.

Harmonization and Impact Statement:

It was recently brought to the attention of the AOSA/SCST Purity Subcommittee that there are issues concerning the classification of partially ergotized naked caryopses as pure seed versus inert matter. The lack of uniformity has led to a dispute among laboratories regarding purity analyses results that needs to be resolved. The initial contact regarding classification of partially ergotized free caryopses was received by the Purity Subcommittee AOSA Co-chair from a member of the ISTA Purity Committee. Based on the question posed to the ISTA Purity Committee (of which the AOSA Purity Co-chair is a member) permission was sought from the ISTA Purity Committee member to circulate the same question and accompanying photograph among the AOSA/SCST Purity Subcommittee. The AOSA Rules currently consider free fungus bodies such as ergot to be inert matter. The Federal Seed Act Regulations (FSA) likewise considers fungal bodies (e.g., ergot) not entirely enclosed within the seed unit to be inert matter. The ISTA Rules consider diseased seed units to be pure seed unless transformed into visible fungal sclerotia. Please refer to excerpts from the FSA and ISTA Rules below.

Supporting Evidence:

Among the AOSA/SCST Purity Subcommittee members responding to the email discussion of this issue, the majority of members (21:1) indicated they would classify partially ergotized free caryopses as inert matter based on the current wording found in section 3.5.c(1) of the AOSA Rules. During a follow-up email survey of subcommittee members, some respondents indicated they agree with adding text to this section of the rules for clarification, while others indicated the current text is sufficient.



Figure 1. Photograph of ergot infected rye caryopses received from the ISTA Purity Committee for discussion on evaluation as pure seed versus inert matter.

Based on responses received from the subcommittee members, any amount of transformation of the caryopsis by the fungus should be considered as indication of infection and loss of viability of the caryopsis; therefore, the diseased structure should be classified as inert matter. External visual inspection and in some cases dissection and inspection of internal structure are employed by subcommittee members when making a determination of ergot infection. Some subcommittee members also mentioned the deleterious effects of ergot on humans and animals, as well as the potential for disease dissemination as additional reasons to classify partially ergotized free caryopses as inert matter.



Figure 2. Longitudinal section of an ergotized caryopsis.

Excerpt from the FSA Regulations

§ 201.48 Kind or variety considered pure seed.

The pure seed shall include all seeds of each kind or each kind and variety under consideration present in excess of 5 percent of the whole. Seeds of kinds or kinds and varieties present to the extent of 5 percent or less of the whole may be considered pure seed if shown on the label as components of a mixture in amounts of 5 percent or less. The following shall be included with the pure seed:

(h) Seed units with nematode galls, fungal bodies (i.e. ergot, other sclerotia, and smut) and spongy or corky caryopses that are entirely enclosed within the seed unit. Refer to § 201.51(c)(1) for inert matter classification.

§ 201.51 Inert matter.

Inert matter shall include seeds and seed-like structures from both crop and weed plants and other material not seeds as follows:

(5) Seed units with nematode galls or fungal bodies (smut, ergot, and other sclerotia) that are not entirely enclosed within the seed unit. Refer to § 201.48(h) for pure seed classification.

Excerpt from the ISTA Rules

3.2.1 Pure seed

The pure seed must refer to the species stated by the applicant, or found to predominate in the test, and must include all botanical varieties and cultivars of that species including:

1. The following structures (even if immature, undersized, shrivelled, diseased or germinated, providing they can be definitely identified as of that species) unless transformed into visible fungal sclerotia (see 3.5.2.5.1 for exceptions when the uniform blowing method is used), smut balls or nematode galls:

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